ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
	)	ET Docket No. 96-102
Amendment of the Commission's Rules to	)	RM-8648
Provide for Unlicensed NII/SUPERNet	)	RM-8653
Operations in the 5 GHz Frequency Range	)	

REPLY COMMENTS OF JOINT COMMENTERS

As both the Joint Commenters and Globalstar pointed out in their initial comments,[1] the proponents of unlicensed NII/SUPERNet devices brought their petition for rulemaking without offering a single, relevant study of the potential for interference between NII/SUPERNet devices and licensed uses of the 5 GHz spectrum.[2] Remarkably, the comments filed by Apple and WinForum in this proceeding do not even attempt to cure this deficiency, and offer no factual basis on which the Commission can address the risk of interference with MSS feeder links. Since no responsible technical rules can be enacted on the present record, the FCC should decline to authorize NII/SUPERNet

[1] Comments of Joint Commenters; Comments of L/Q Licensee, Inc. The Joint Commenters are COMSAT Corporation ("COMSAT") and ICO Global Communications ('ICO"). ICO plans to provide global mobile communications services via satellites in nongeostationary orbit; COMSAT expects to operate a satellite feeder link/earth station in the U.S. and act as a distributor of ICO services. Globalstar is a low-earth orbiting, Mobile Satellite Service ("MSS") system licensed to LQL. ICO and Globalstar both will operate satellite feeder links in the 5 GHz band.

[2] Appendix to Comments of Joint Commenters at 1; Comments of L/Q Licensee, Inc. at 4.

operation in the 5150-5250 MHz range at this time, and should refer the interference questions to an appropriate industry group such as the Telecommunications Industry Association ("TIA").

I. NII/SUPERNet Proponents' Assurances Concerning Interference Have no Factual Foundation.

Rules that will permit operation of unlicensed devices in radiofrequency bands already allocated to MSS feeder links cannot be developed without consideration of their impact on authorized services. It is necessary to know how the devices will be used, and to make reasonable assumptions concerning the ratio of indoor to outdoor use and the attenuation levels that can be attributed to building roofs and walls. It also is necessary to make reasonable, fact-based assumptions concerning the number of such devices that will be in operation at any given time, and to establish the carrier-to-interference ratio that licensed users will be asked to tolerate from the unlicensed service. Only when these facts and assumptions are known can the Commission make the threshold determination that compatible operation is, or is not, possible; and, if it is possible, to ascertain the power output, peak duty cycle, peak EIRP and other specifications that will avoid unacceptable risk of degradation of the service provided to customers of MSS systems.

The proponents of NII/SUPERNet have yet to offer this essential factual background. Apple's initial petition for rulemaking contained no interference study, and WinForum merely offered an AT&T study that was not based on data specific to the NII/SUPERNet devices.[3] The proponents' comments fail to cure this deficiency. Rather

---

[3] *See* Comments of L/Q Licensee, Inc. at 3-4.

than offer an interference analysis, the Apple and WinForum comments merely assert that their service resembles HIPERLAN, and that since an ITU analysis suggests that global MSS systems will not encounter excessive interference from HIPERLAN, MSS feeder links can be expected to cope with interference from NII/SUPERNet devices, as well.[4]

The proponents' reliance on HIPERLAN, however, is entirely misplaced. Unlike NII/SUPERNet, HIPERLAN is a well-defined service governed by technical specifications set out in a European Technical Standards Institute (ETSI) standard.[5] No comparable specifications are available for NII/SUPERNet. Moreover, the ITU analysis on which the Commission and the proponents rely as establishing the feasibility of frequency sharing between HIPERLAN and MSS feeder links relates only to so-called Type 1 HIPERLANs, which are intended for low-EIRP, indoor use.[6] The higher-power Type 2 and Type 3 HIPERLANs, which are suitable for extensive outdoor use and therefore pose interference problems similar to those that can be expected from NII/SUPERNet devices used outdoors, still have not been adopted by ETSI and are the subject of ongoing spectrum compatibility studies.[7] In any event, the Commission must

---

[4] Comments of Apple Computer, Inc. at 12; Comments of the Wireless Information Networks Forum at 17.

[5] *See* Appendix to Comments of Joint Commenters at 1.

[6] The ITU study also is based on data and assumptions that may not apply to all MSS systems or to NII/SUPERNet devices. *See, e.g.,* Comments of L/Q Licensee, Inc. at 10 and Attachment at 5-6; *see also* Comments of Constellation Communications, Inc. in Response to WinForum Petition for Rulemaking at 2-3 (July 10, 1995).

[7] Even the interference concerns raised by the less powerful, indoor Type 1 HIPERLANs have not been entirely resolved. As part of the Conference of European Post and Telecommunications (CEPT) public inquiry process concerning HIPERLAN devices at 5

resolve the issues in this proceeding on the basis of the record made in this proceeding -- not on loose analogies to studies conducted in the context of other services and systems in other parts of the world.

In contrast to the paucity of information offered by the proponents of NII/SUPERNet, the Joint Commenters and Globalstar have offered studies showing that under the rules proposed in the instant Notice of Proposed Rulemaking ("NPRM"),[8] MSS feeder links will experience unacceptable levels of interference from NII/SUPERNet devices.[9] Nothing offered by the proponents rebuts these analyses, and the record therefore is inadequate to support the sharing of spectrum by MSS feeder links and these new, unlicensed devices.

II. The Interference Problem Should be Referred to the Industry for Further Study.

On the present record, adoption of the performance criteria proposed in the NPRM courts a needless risk of degradation of a service the Commission already has found to be in the public interest -- a risk that will be exacerbated by the Commission's proposal to create a "safe harbor" for anyone operating an NII/SUPERNet device within

---

GHz, interference concerns have been identified by the MSS proponents, who are continuing to advocate additional safeguards to avoid signal degradation and power robbing.

[8] *Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5 GHz Frequency Range,* ET Docket No. 96-102, Notice of Proposed Rulemaking, FCC No. 96-193 at ¶ 46-50 and Appendix A (May 6, 1996)("NPRM").

[9] *See* Appendix to Comments of Joint Commenters; *see also* Engineering Declaration appended to Opposition of Loral/QUALCOMM Partnership, L.P. to WinForum Petition for Rulemaking (July 10, 1995) and Reply Comments of Loral/QUALCOMM Partnership, L.P. (July 25, 1995).

the parameters set out in the proposed rules.[10] Under these circumstances, only a limited number of responsible options are open to the Commission.

One option is to authorize only indoor operation of NII/SUPERNet devices in the 5150 MHz-5250 MHz band, subject to the Commission's proposed 100-milliwatt EIRP, a peak transmission duty cycle of 10% and a peak burst transmission time of 10 milliseconds.[11] Outdoor use, higher-power uses or operation of devices with directional antennas[12] should be authorized only in the 5725 MHz - 5875 MHz band, where NII/SUPERNet devices will not interfere with MSS feeder links.[13] If this option is

---

[10] As Globalstar's comments point out, the proposed "safe harbor" in Section 15.409(a) is inconsistent with the underlying premise of Part 15, which requires unlicensed devices to operate on a noninterference basis. Since the numbers and locations of operating unlicensed devices cannot be predicted or controlled, the right of licensed users to complain about interfering emissions from such devices must be preserved. *See* Comments of L/Q Licensee, Inc. at 18.

[11] *See* Comments of Joint Commenters at 5-6 and Appendix at 9.

[12] The Joint Commenters do not agree with WinForum's proposal to authorize use of NII/SUPERNet devices with directional antennas at up to 6 dBi of gain. Comments of the Wireless Information Networks Forum at 17. Directional antennas can increase EIRP dramatically: a 6 dBi directional antenna with100 milliwatts of input power from the transmitter effectively radiates 400 milliwatts of power. The Joint Commenters agree with the Commission's approach in the NPRM, which is to set an absolute EIRP limit that takes antenna gain into account. NPRM at ¶ 47.

[13] This proposed approach is largely consistent with solutions proposed by the principal NII/SUPERNet proponents. Apple and WinForum both have proposed limitation of outdoor uses to the upper range of the 5 GHz band, and WinForum accepts an "*actual radiated power* limit of approximately 100 mW for the lower (5.15-5.35 GHz) part of the band . . ." Comments of the Wireless Information Networks Forum at 22 (*emphasis in original*); *see* Comments of Apple Computer, Inc. at 10-12. Neither Apple nor WinForum, however, has agreed to accept the limits on antenna gain that are necessary if radiated power, or EIRP, is to be kept within the 100-milliwatt limit that the Commission has proposed.

pursued, the Commission should not adopt any "safe harbor" for compliant devices -- *i.e.*, licensed users should retain their existing right to complain about interference from unlicensed sources.

Another option -- and the approach the Joint Commenters urge -- is to defer the question of unlicensed operation in the 5150-5250 MHz band until an appropriate industry organization has gathered reliable information and concluded credible interference studies. The Joint Commenters also would support authorization of NII/SUPERNet operations, only in those 5 GHz frequencies not allocated to MSS feeder links, pending completion of the industry interference discussions.[14] If the Commission withholds authorization of 5150 MHz-5250 MHz NII/SUPERNet operation until this process is completed, the proponents of NII/SUPERNet finally will have the incentive to define their proposed applications and talk seriously about workable means of sharing spectrum.[15] Such discussions could be sponsored by an impartial industry forum such as the TIA, with full participation by all interested parties.

Conclusion

The FCC does not yet have a record sufficient to justify the sharing of spectrum already allocated to an important, innovative global service with ill-defined, unlicensed

---

[14] This authorization still would provide an ample 250 MHz of spectrum, within the remaining bands the Commission has proposed for NII/SUPERNet, to support operation of these devices pending industry agreement on interference issues.

[15] As noted earlier, both of the principal proponents of NII/SUPERNet appear to acknowledge the seriousness of the interference problem and appear willing to consider indoor-only authorization for devices that share spectrum with MSS feeder links. *See* n. 11, *supra.* Their comments suggest a willingness to compromise that should be pursued in industry discussions.

devices. Until that record can be developed, the Commission should take no action that will jeopardize the users of MSS services.

Respectfully submitted,

By: _____

Cheryl A. Tritt
Charles H. Kennedy
Morrison & Foerster LLP
2000 Pennsylvania Avenue, N.W.
Washington, D.C. 20006-1888
(202) 887-1500

Attorneys for ICO Global Communications, Inc.

_____

Neal T. Kilminster
Associate General Counsel
COMSAT International Communications
6560 Rock Spring Drive
Bethesda, MD 20871
(301) 214-3000

August 14, 1996

CERTIFICATE OF SERVICE

I, Kathryn M. Stasko, do hereby certify that the foregoing **REPLY COMMENTS OF JOINT COMMENTERS** have been furnished, via hand delivery on this 14th day of August, 1996, to the following:

William F. Caton
Office of the Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Chairman Reed E. Hundt
Federal Communications Commission
1919 M Street, N.W., Room 814
Washington, D.C. 20554

Commissioner James H. Quello
Federal Communications Commission
1919 M Street, N.W., Room 802
Washington, D. C. 20554

Commissioner Rachelle B. Chong
Federal Communications Commission
1919 M Street, N.W., Room 844
Washington, D.C. 20554

Commissioner Susan Ness
Federal Communications Commission
1919 M Street, N.W., Room 832
Washington, D.C. 20554

Don Gips
Chief
International Bureau
Federal Communications Commission
2000 M Street, N.W., Room 830
Washington, D.C.

Thomas Tycz
Chief
Satellite & Radiocommunications Division
International Bureau
Federal Communications Commission
2000 M Street, N.W., Room 800
Washington, D.C. 20554

Cecily C. Holiday
Deputy Chief
Satellite & Radiocommunications Division
International Bureau
Federal Communications Commission
2000 M Street, N.W., Room 590
Washington, D.C. 20554

Richard M. Smith, Chief
Office of Engineering & Technology
Federal Communications Commission
2000 M Street, N.W., Room
Washington, D.C. 20554

Bruce A. Franca, Deputy Chief
Office of Engineering & Technology
Federal Communications Commission
2000 M Street, N.W., Room
Washington, D.C. 20554

Michael J. Marcus
Associate Chief for Technology
Office of Engineering & Technology
Federal Communications Commission
2000 M Street, N.W., Room
Washington, D.C. 20554

Michele C. Farquhar
Chief
Wireless Telecommunications Bureau
Federal Communications Commission
2025 M Street, N.W., Room 5002
Washington, D.C. 20554

Kathryn M. Stasko

Kathryn M. Stasko